

### In the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

- 1        1. (Currently Amended) A method for reducing noise in a  
2 sampled acoustic signal, comprising:  
3        receiving a stream of sampled acoustic signals;  
4        digitizing each sampled acoustic signal thereby forming  
5 digital samples;  
6        selecting a fixed number of digital samples;  
7        multiplying the digital samples by a windowing function;  
8        computing the fast Fourier transform of the selected windowed  
9 digital samples to yield transformed windowed signals;  
10       selecting half of the transformed windowed signals;  
11       calculating a power estimate of the transformed windowed  
12 signals;  
13       calculating a smoothed power estimate by smoothing the power  
14 estimate over time using the equation:  
15  
16                    
$$P^t(i) = (1-\alpha) P^{t-1}(i) + \alpha P(i)$$
  
17  
18 where:  $P^t(i)$  is the smoothed power estimate for a current time  
19 sample to be calculated for the i-th FFT point;  $P^{t-1}(i)$  is the  
20 smoothed power estimate for an immediately prior time sample for  
21 the i-th FFT point;  $P(i)$  is the calculated power estimate of the  
22 transformed windowed signals for the i-th FFT point; and  $\alpha$  is an  
23 experimentally chosen predetermined value called the smoothing  
24 factor;  
25       calculating a noise estimate;  
26       calculating a gain function from the noise estimate and the  
27 smoothed power estimate, estimate;

28 calculating a transformed speech signal by multiplying the  
29 gain function with the transformed windowed signal;  
30 calculating an inversed fast Fourier transform of the  
31 transformed speech signal to yield a sampled speech signal; and  
32 adding the sampled speech signal to a portion of the speech  
33 signal of a previous frame.

1 2. (Original) The method of Claim 1, wherein the fixed  
2 number of samples is thirty-two.

1 3. (Original) The method of Claim 1, wherein the windowing  
2 function is a hanning window function.

1 9. (Currently Amended) A system for reducing noise in an  
2 acoustical signal comprising:  
3 a sampler for obtaining discrete samples of the acoustical  
4 signal;  
5 an analog to digital converter coupled to the sampler an  
6 operable to convert the analog discrete samples into a digitized  
7 sample;  
8 a noise suppression circuit coupled to the analog to digital  
9 converter and operable to:  
10 receive the ~~analog discrete~~ digitized samples;  
11 select a fixed number of digitized samples;  
12 multiply the digitized samples by a windowing function;  
13 compute the fast Fourier transform of the windowed  
14 digitized samples to yield transformed windowed signals;  
15 select half of the transformed windowed signals;  
16 calculate a power estimate of the transformed windowed  
17 signals;  
18 calculate a smoothed power estimate by smoothing the power  
19 estimate over time using the equation:

20

21 
$$P^t(i) = (1-\alpha) P^{t-1}(i) + \alpha P(i)$$

22

23 where:  $P^t(i)$  is the smoothed power estimate for a current time  
24 sample to be calculated for the i-th FFT point;  $P^{t-1}(i)$  is the  
25 smoothed power estimate for an immediately prior time sample for  
26 the i-th FFT point;  $P(i)$  is the calculated power estimate of the  
27 transformed windowed signals for the i-th FFT point; and  $\alpha$  is an  
28 experimentally chosen predetermined value called the smoothing  
29 factor;

30 calculate a noise estimate;

31 calculate a gain function from the noise estimate and the  
32 smoothed power ~~estimate~~ estimate;

33 calculate a transformed speech signal by multiplying the  
34 gain function with the transformed windowed signal;

35 calculate an inversed fast Fourier transform of the  
36 transformed speech signal to yield a sampled speech signal; and

37 add the sampled speech signal to a portion of the speech  
38 signal of a previous frame.

1 10. (Original) The system of Claim 9, wherein the fixed  
2 number of samples is thirty-two.

1 11. (Original) The system of Claim 9, wherein the windowing  
2 function is a hanning window function.